Ordering number:ENN725F

Monolithic Linear IC

LA7800

Color TV Synchronization, Deflection Circuit

Overview

The LA7800 is a multifunctional IC containing various functions required for synchronization, deflection of color television sets. This IC has been developed under the design concept that the basic characteristics should be made more complete and the television sets with this IC incorporated should be streamlined by making the device compact (DIP-16) and by minimizing the number of parts required.

Functions

- Synchonizing separation.
- Horizontal oscillation.
- Vertical drive.
- Vertical blanking.
- Horizontal AFC.
- Vertical oscillation.
- X-ray protection.

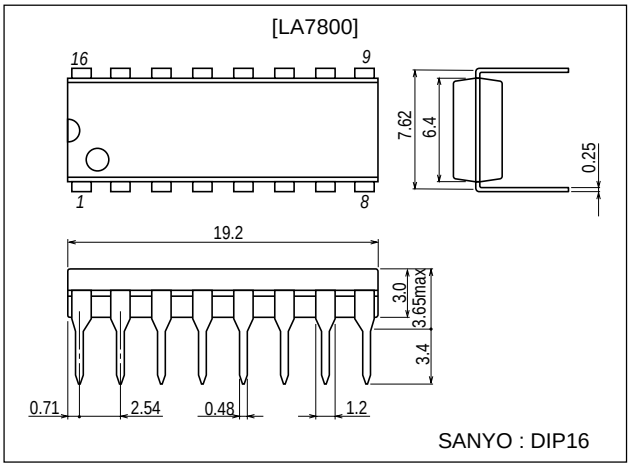
Features

- Multifunction and compact (DIP-16).
- Minimum number of parts required.
- Horizontal and vertical oscillators are stable against variations in ambient temperature and supply voltage due to small warm-up drift.
- Small variation in horizontal oscillation frequency.
- Good linearity and interlace because DC bias at vertical output stage is subjected to sampling control within retrace time.
- Vertical blanking pulse width can be set freely according to peripheral parts.

Package Dimensions

unit:mm

3006B-DIP16



Specifications

Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{12}		14	V
Muximum supply current	I_{15}		16	mA
Allowable power dissipation	Pd max	Ta≤60˚C	450	mW
Operating temperature	Topr		–20 to +85	˚C
Storage temperature	Tstg		–55 to +125	˚C

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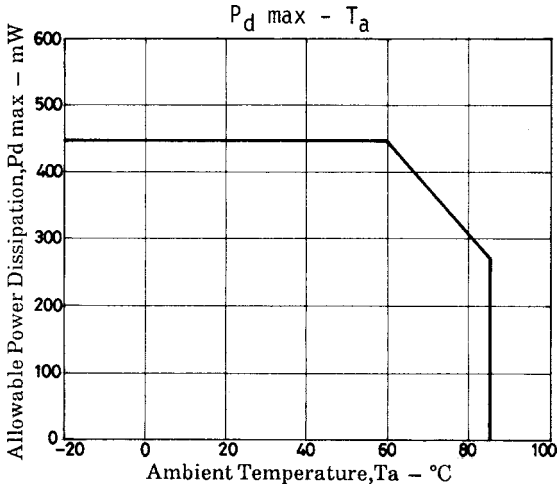
Recommended Operating Conditions at Ta = 25˚C

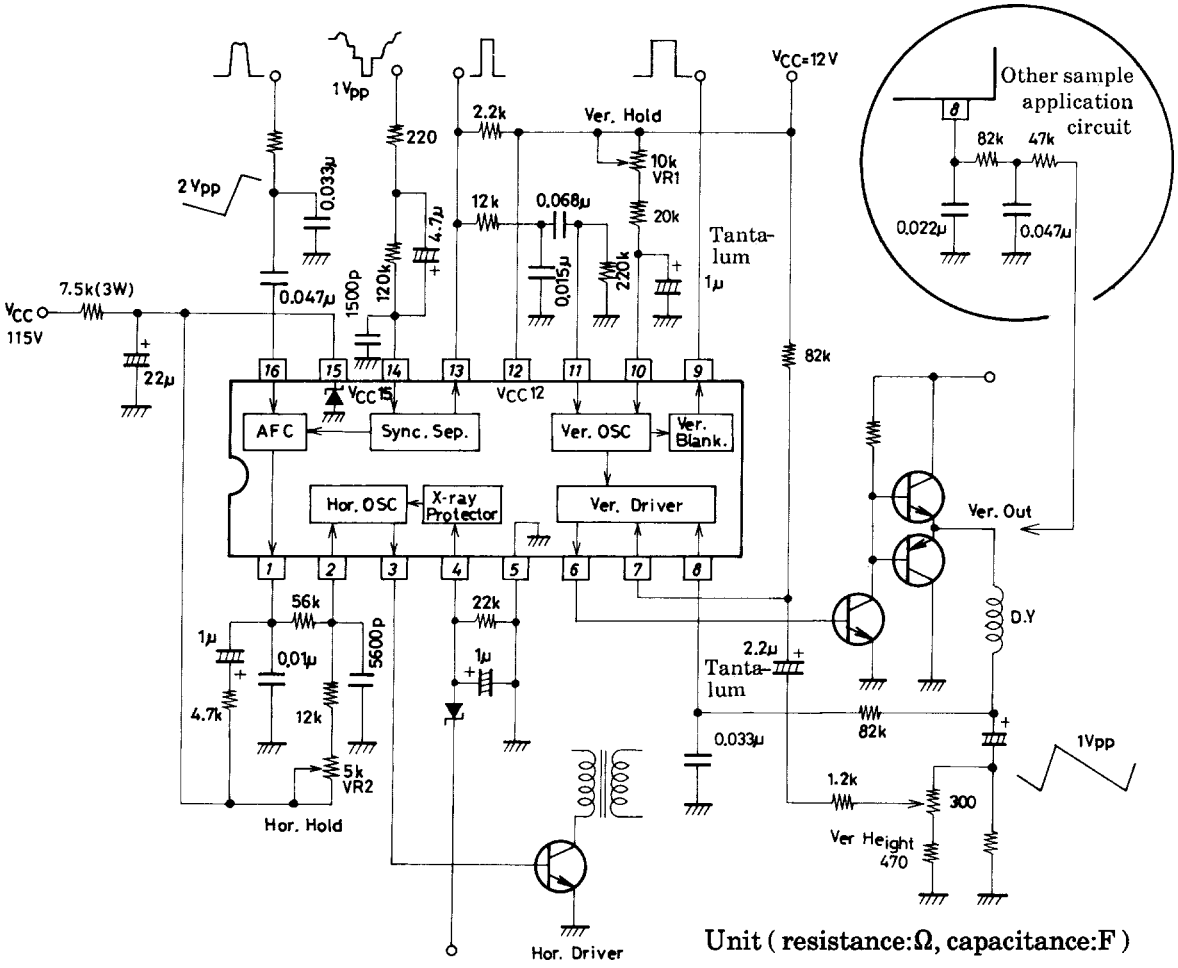
Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V_{12}		12	V

Operating Characteristics at Ta = 25˚C, V_{12}=12V, $I_{CC}15$=13mA

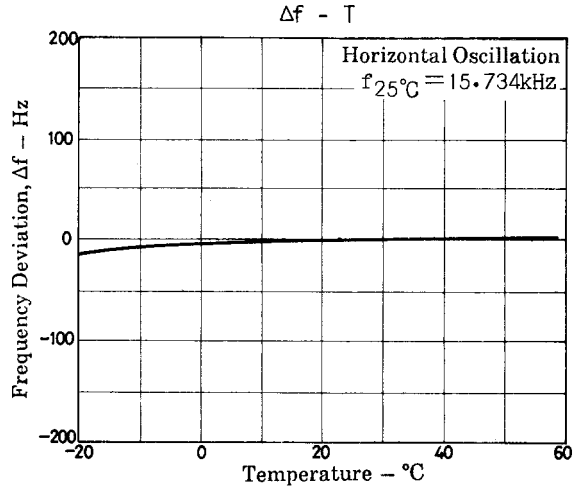
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
$V_{CC}12$ current drain	$I_{CC}12$		13.0		20.0	mA
$V_{CC}15$ supply voltage	$V_{CC}15$		11.8		13.2	V
Vertical frequency pull-in range			9.0		11.0	Hz
Vertical free-running frequency	f_V	f_V center 55Hz	50		60	Hz
Supply voltage dependence of vertical frequency		V12=12±1V, 55Hz at 12V	–0.5		+0.5	Hz
Temperature characteristics of vertical frequency		Ta=–10 to +60˚C	–0.028		+0.028	Hz/˚C
Vertical driver amplification factor			4.0		7.0	˚C
Horizontal free-running frequency	f_H	f_H center 15.734kHz	–750		+750	Hz
Supply voltage dependence of horizontal frequency		V_Z–V_Z ×90%	–50		+50	Hz
Temperature characteristic of horizontal frquency		Ta=–10 to +60˚C	–3.4		+3.4	Hz/˚C
Horizontal output pulse width		f_H=15.734kHz	21.5		26.5	µs
Horizontal output drive current			3.8		7.2	mA

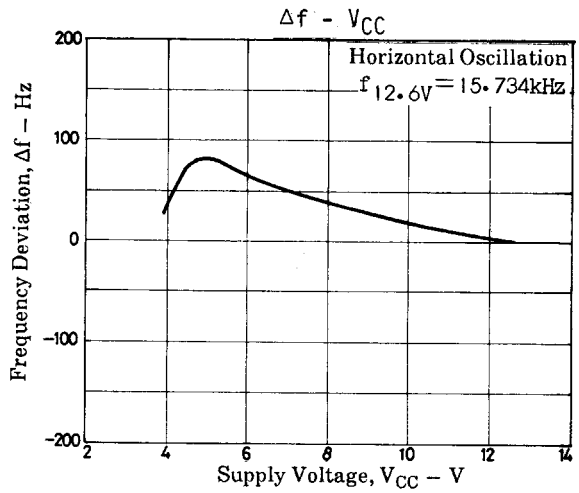


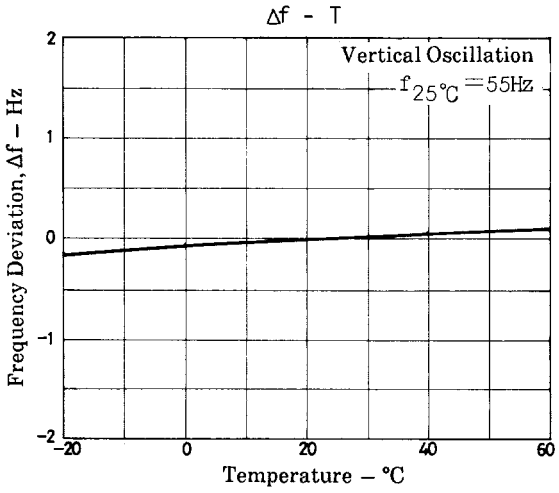
Sample Application Circuit

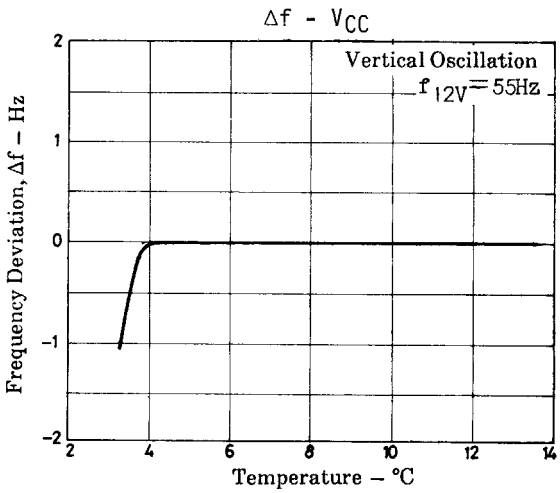


Note) 1. The vertical output circuit is represented by the basic circuit.
2. The peripheral parts connected to pin 8 are changed according to the Ver. Out circuit conditions.
3. The limit resistor (220Ω : 1Vp-p) connected to pin 14 is changed according to the magnitude of the input video signal.
4. The time constant circuit (120kΩ, 4.7μF) connected to pin 14 is such that the resistor is changed according to the DC level of the input video signal and the time constant is changed with the capacitance value.









Note) The temperature characteristic of oscillation frequency represents the one for IC itself without peripheral parts.